DOCUMENT RESUME

ED 442 966 CE 080 379

AUTHOR Overtoom, Christine G.
TITLE Project Build: Integrating Technical and Employability Skills in a Construction Industry-Based Welfare-to-Work Training Program.
INSTITUTION Ohio State Univ., Columbus. Community Outreach Partnership Center.
SPONS AGENCY Department of Housing and Urban Development, Washington, DC. Office of University Partnerships.
PUB DATE 2000-05-00
NOTE 13p.
CONTRACT COPC-OH-96-066
PUB TYPE Information Analyses (070)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Adult Education; *Building Trades; Construction (Process); Curriculum Development; *Employment Potential; *Job Skills; *Job Training; Performance Based Assessment; Student Evaluation; *Unemployment; Vocational Education
IDENTIFIERS Project Build; Welfare to Work Programs

ABSTRACT

Project Build is an eight-week course in construction industry basics for unemployed residents of the neighborhoods surrounding The Ohio State University. Developing curriculum for Project Build revealed that existing training materials in the construction industry focus on technical skills. Extensive conversations with industry experts about melding employment and job-specific skills became part of the collaborative process. Although technical skills prepared Project Build participants for entry-level employment and were instrumental in getting them "in the door," they were not enough. Industry experts articulated that employees are more likely to keep the job and progress in a career if training is integrated with employment skills. Teaching and learning employability skills was consistent with the emerging needs of a world economy in a high performance work environment. The literature was decidedly absent or unclear about how to facilitate employability skills assessment. Three criteria were cited for assessing employability skills: validity of an assessment rests on job analysis; the skill assessed should be teachable; and each assessment must be evaluated in the context of its purpose. (Contains 25 references.) (YLB)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 442 966

THE OHIO STATE UNIVERSITY

**Workforce Development and Education Section**

**College of Education**

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

# Project Build: Integrating Technical and Employability Skills in a Construction Industry-Based Welfare-to-Work Training Program

Christine G. Overtoom

**Project Build** is an eight-week course in construction industry basics for unemployed residents of the neighborhoods surrounding The Ohio State University. With high levels of employment opportunities in the trades (Thiers, 1996), the anticipated outcome of participation in the program is entry-level employment or successful application to an apprenticeship program. Project Build is part of the job training component of a five-year U.S. Department of Housing and Urban Development grant to revitalize the University District through collaborative stakeholder partnership efforts. Each competency-based segment of the course is grounded in the constructivist theoretical framework and introduces a separate construction industry trade in the context of an actual or simulated job setting. Learners move from passive observation to active learning as they construct knowledge through hands on, "real world" experiences (Brown, 1998; Honebein, 1996; Murphy, 1997). Project Build participants actively engage in basic skills training in eight areas of the construction industry (landscaping, plumbing, electrical, carpentry, heavy highway construction, masonry, HVAC – heating, ventilation, and air conditioning – and roofing). A team approach combines facilitation by volunteer construction industry experts and a workforce skills adult educator, as the technical skills are integrated with "employability skills" – qualities and information necessary to gain and maintain employment.

## Preparing for Work in the 21st Century

Today's high-performance workplace recognizes a primary competitive edge in its workforce: the knowledge, skills, and attitudes of its people. Employers are scrambling to fill an increasing number of interdependent jobs with workers who demonstrate a blend of technical and human relations skills: cognitive abilities in critical thinking, problem solving, and conflict negotiation; work ethic attributes; and basic

CE 080 379



BEST COPY AVAILABLE

academic skills application. For the past two decades, panels of U.S. educators, business leaders, and governmental officials have identified and studied skills that are critical to success in the workplace of the future. Technical capabilities – knowledge, skills, and performance abilities – in a given field are no longer sufficient (Queeney, 1997; Zargari, 1997; Strawn, 1998; Askov & Gordon, 1999). The *knowledge worker* sought by employers has evolved from a "job holder" to a highly skilled, adaptive "package of capabilities." Numerous authors point out the importance of continuously developing skills beyond those required for the performance of a specific job, and identify *employability skills* which enable individuals to prove their value to an organization as the key to job survival (Broadbent, 1999; Imel, 1999; Zargari, 1997; Oliver, 1997; Claggett, 1997; Saterfiel & McLarty, 1995; McLaughlin, 1995; Grubb, 1992; Secretary's Commission on Achieving Necessary Skills, 1991; Carnevale et. al., 1990).

In the United States, welfare-to-work programs are striving to meet employment needs of clients by closing the skills gap. Because of the need for technical skills in entry-level jobs, employers have been steadily raising entry requirements into the low end of the labor market (Taylor, 1997). The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 has afforded states flexibility in determining how and when to use education and training in welfare-to-work programs (Cohen, 1998). Job training programs that require people on public assistance to find work quickly have been encouraged by the 1996 legislation (Strawn, 1998; Zargari, 1997). There is a growing concern, however, that "quick fix" programs neglect a thorough concentration

on the constantly changing workforce qualifications, personal attributes, and technical skills (Imel, 1999; Stawn, 1998; Zargari, 1997).

**Employability Skills: an Overview**

What is the meaning of the phrase *employability skills*? There are almost as many definitions of the phrase as there are pieces of literature describing them. From the synthesis of definitions in Table I below, I have crafted a representative definition:

> *Employability skills* are a holistic constellation of transferable core skill groups that represent essential functional and enabling knowledge, skills, and attitudes required by the 21st century workplace. They are necessary for entry-level employment, further education, upward mobility of incumbent workers, and for lifelong career success.

The volume of major U.S. studies undertaken to identify and describe employability skills underscores their criticality. Two national studies - *What Work Requires of Schools,* conducted by the Secretary's Commission on Achieving Necessary Skills (SCANS) for the U.S. Department of Labor (U.S. Department of Labor, 1991) and *Workplace Basics: the Essential Skills Employers Want,* conducted by the American Society for Training and Development (ASTD) with the support of the Department of Labor (Carnevale et. al, 1990) - are seminal works in identifying employability skills. They are often used as benchmarks or beginning points for other studies (U.S. Department of Labor, 1991; Carnevale et. al, 1990).

Table I
*Employability Skills* Definitions

| Source | Year | Definition |
|---|---|---|
| McLaughlin, M. A.<br>Conference Board of Canada's Corporate Council on Education | 1995 | Set of characteristics that make a person employable, including knowledge, know-how, attitudes, and behaviors; generic foundational skills rather than skills specific to certain occupations, levels of responsibility, or limited to today's jobs |
| Clagett, C. A.<br>Prince George's Community College Office of Institutional Research and Analysis | 1997 | *Workplace essentials*, a broad hierarchical set of skill groups previously required only of supervisors and management, beginning with knowing how to learn, progressing through basic academic, higher-order thinking, personal management, and leadership skills |
| Grubb, W. Norton, et. al.<br>National Center for Research in Vocational Education | 1992 | Skills crucial to employment including a variety of capacities<br>(motivation, initiative, judgment, ability to work with others, communication skills) which are not directly taught in schools |
| Saterfiel, T.H. & McLarty, J. R.<br>ERIC Digest | 1995 | Those skills required to acquire and retain a job, often used to describe the preparation or foundational skills upon which a person must build job-specific skills; valued because they apply to many jobs and so can support common preparation to meet the needs of many different occupations |
| Secretary's Commission on Achieving Necessary Skills | 1991 | *Workplace know-how*, separated into foundational skills and competencies that constitute the critical functional and enabling skills required by America's workplace; necessary for entry-level employment, further education, and upward mobility of incumbent workers |
| Carnevale, A. P.<br>The American Society for Training and Development | 1990 | *Workplace skills*, the range of skills needed to participate successfully in the volatile mix of demographic, economic, and technical forces of a changing workplace |
| Oliver, K. M., et. al.<br>(State of Maryland) | 1997 | *Skills for Success(SFS)*, essential academic knowledge and general, cross-disciplinary skills, in terms of what students should know and be able to do; process-centered, comprehensive, coherent, clear and understandable, representing high expectations to prepare and empower all students for 21st century demands |
| Michigan Employability Skills Task Force | 1987 | Generic skills employers believed to be important in jobs across all sectors of the economy |
| Broadbent, W. A.<br>(State of Hawaii) | 1999 | *Workplace skills*, generic essential employment skills related to seeking, obtaining, keeping, and advancing in any job (from V-TECS, 1991) |

## Employability Skills: Facilitating the Learning

The blueprint provided by the SCANS study has not only spawned other studies of employability skills, it has been pivotal in initiating dialogue between educators and employers about ways to bridge the skills gap (Nash & Korte, 1997; Huitt, 1997;

Whitman, 1996; DeLeon & Borchers, 1998; North & Worth, 1998). Employability skills are not "directly taught" in schools (Grubb et. al., 1992). Teaching and learning these skills is consistent with the emerging needs of a world economy in a high performance work environment. Such a workplace is characterized by five principles that correspond to five principles of effective learning:

1. Tasks and jobs are integrated through broad job definitions or cross-functional teams. (*Knowledge and curriculum are integrated: head and hand, knowing and doing.)*
2. Workers are given more initiative and take more responsibility. (*Learning is active or engaged, a process of discovery rather than a dissemination of information.)*
3. Employees solve problems in nonroutine situations. (*Deeper understanding is encouraged. This allows responses to stimuli the learner has not already encountered.)*
4. There is an emphasis on continuous improvement. (*New approaches to learning focus on thought processes that generate learning rather than the 'right answer.')*
5. Workers are expected to understand their functions within the context of the broader purposes of the organization. (*New strategies call for learning in context.)* (Bailey, 1997, pp. 39-40).

Considerable research is needed in creating and assessing curriculum that integrates the learning of employability skills contextually. "What remains largely undone is the

development of methods to assess the necessary skills that have been identified, and, further, the teaching of such skills, that is, their integration in some manner into the curriculum" (O'Neil et. al., 1997, p. 24).

**Employability Skills: Assessment**

The proverbial chicken-and-egg dilemma prompts me to ask the question, "Which comes first, the curriculum or the assessment?" In the case of employability skill assessment, the literature is decidedly absent or unclear about how to facilitate this learning. Assessment instruments support the information needs of individuals as they enter the workplace from school or make transitions within the workplace itself. Three criteria are cited for assessing employability skills:

1) the validity of an employability skills assessment rests on job analysis;
2) the skill assessed should be teachable; and
3) each assessment must be evaluated in the context of its purpose (Saterfiel & McLarty, 1995).

In the second criteria, the conditions for a 'teachable skill' are not defined. The authors note that not all employability skills can be "neatly packaged in the traditional academic disciplines," so educators are urged to make the extra effort to infuse them into curriculum (1995). However, they are not given guidelines. (See Table II below for current assessment instruments.)

**Table II**

**Employability Skills Assessment Instruments**

| Name | Developer | Methodology |
|---|---|---|
| WSS<br>(Workplace Success Skills) | Learning Resources, Inc.<br>(LRI)<br>(CT) | • video vignettes<br>• multiple choice questions<br>• statistically validated (n=630) |
| SCANS/TEJAS<br>Test Compendium | Richland College<br>Instructional Design Division (TX) | • 2-section test bank<br>• 400 cognitive; 400 affective<br>• statistically validated (n=1200) |
| Skill Coach | AES International (MA) | • 2-dimensional criterion-referenced assessment model<br>• validated behavioral performance indicators |
| Working | Piedmont Technical College<br>FL | • 50 item scale<br>• statistically validated (n=640)<br>• pilot tested and statistically analyzed to determine strongest predictors |

## Conclusion

Developing curriculum for Project Build revealed that existing training materials in the construction industry focus on technical skills. Extensive conversation with industry expert partners about melding employability and job-specific skills became part of the collaborative process. Although technical skills prepare Project Build participants for entry-level employment and are instrumental in getting them "in the door," they are

not enough. Industry experts articulate that employees are more likely to keep the job and progress in a career if training is integrated with employability skills.

---

**References**


Askov, E. N. and E. E. Gordon. (1999). The brave new world of workforce education. New Directions for Adult and Continuing Education, 83, 59-68.

Bailey, T. (1997). Changes in the nature of work: implications for skills and assessment. In H. F. O'Neil, Jr. (Ed.), Workforce Readiness: Competencies and Assessment. Namwah, NJ: Lawrence Erblaum Associates, Publishers.

Broadbent, W. A. (1999). Generic workplace skills for job application, employment retention, and career promotion in today's economic environment. Honolulu, Hawaii: State Board for Vocational Education.

Brown, B. L. (1998). *Applying constructivism in vocational and career education, information series n. 378.* ERIC Clearinghouse on Adult, Career, and Vocational Education, College of Education, The Ohio State University, Columbus, OH.

Carnevale, A. P., Gainer, L. J., & Meltzer, A. S. (1990). Workplace Basics: the Skills Employers Want. Alexandria, VA: American Society for Training & Development.

Claggett, C. A. (1997). Workforce skills needed by today's employers. (Market Analysis MA98-5). Office of Institutional Research and Analysis: Prince George's Community College.

Cohen, M. (1998). Education and training under welfare reform. Welfare

Information Network Issue Notes, 2 (2). Washington, DC.

DeLeon, J. E. and Borchers, R. E. (1998). High school graduate employment trends and the skills graduates need to enter Texas manufacturing industries. Journal of Vocational and Technical Education, [On-line], 15(1). Available: http://scholar.lib.vt.edu/ejournals/JVTE/v15n1/JVTE6.html.

Grubb, W. N., Dickinson, T., Giordano, L. and Kaplan, G. (1992). Betwixt and between: education, skills, and employment in sub-baccalaureate labor markets. Berkeley, CA: National Center for Research in Vocational Education.

Honebein, P. (1996). Seven goals for the design of constructivist learning Environments. In B. Wilson, *Constructivist Learning Environments,* 17-24. New Jersey: Educational Technology Publications.

Huitt, W. G. (1997). The SCANS report revisited. Paper delivered at the Fifth Annual Gulf South Business and Vocational Education Conference, Valdosta State University, Valdosta, GA, April 18.

Imel, S. (1999). Workforce education: beyond technical skills. ERIC Clearinghouse Trends and Issues Alert. [On-line]. Available: www.ericacve.org.

McGlaughlin, M. A. (1995). Employability skills profile: what are employers looking for? ERIC Digest EDO-CG-95-44. Columbus, OH: Center on Education and Training for Employment, The Ohio State University.

Murphy, E. (1997). "Constructivist Checklist." In *Constructivism: from philosophy to practice.* [On-line]. Available: www.stemnet.nf.ca/~wlmurphy/emurphy/cle4.html.

Nash, B. E. and Korte, R. C. Validation of SCANS competencies by a national job analysis study. In H. F. O'Neil, Jr. (Ed.), Workforce Readiness: Competencies and Assessment. Manwah, NJ: Lawrence Erblaum Associates, Publishers.

North, A. B. and Worth, W. E. (1998). Trends in advertised SCANS competencies: technology, interpersonal, and basic communication job skills, 1992-1996. Journal of Employment Counseling, 35, 195-205.

Oliver, K. M., et. al. (1997). Skills for success in Maryland: beyond workforce readiness. In H. F. O"Neil, Jr. (Ed.), Workforce Readiness: Competencies and Assessment. Manwah, NJ: Lawrence Erblaum Associates, Publishers.

Queeney, D. S. (1997). Redefining competency from a systems perspective for the 21st century. Continuing Higher Education Review, 61, 3-11.

Sarterfiel, T. H. and McLarty, J. R. (1995). Assessing employability skills. ERIC Digest EDO-CG-95-21. Columbus, OH: Center on Education and Training for Employment, The Ohio State University.

Secretary's Commission on Achieving Necessary Skills. (1991). *What work requires of schools: A SCANS report for America 2000.* Washington, DC: U.S. Department of Labor.

Strawn, J. (1998). Beyond job search or basic education: rethinking the role of skills in welfare reform. Center for Law and Social Policy. [On-line]. Available: www.clasp.org.

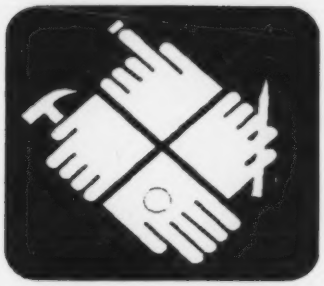
Taylor, J. C. (1997). Learning at work in a work-based welfare system:

opportunities and obstacles: lessons from the school-to-work experience. Boston, MA: Jobs for the Future.

Thiers, N. (1996). A good trade. *Vocational Educational Journal, 71 (3), 32-35.*

Zargari, A. (1997). Vocational-technical education's role in welfare reform: providing employability skills for welfare recipients. Journal of Industrial Teacher Education, 34, 86-94.

Whitman, P. D. (1996). Preparing students for a rapidly changing world. California Career Education Associaion Journal. [On-line]. Available: http://cavix.org/ccea/Whitman.htm.



PROJECT
BUILD

## WORKPLACE KNOW-HOW

The know-how identified by SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. These include:

**COMPETENCIES** – effective workers can productively use:

- **Resources** – allocating time, money, materials, space, and staff:
- **Interpersonal Skills** – working on teams, teaching others, serving customers, leading, negotiating, and working well with people from culturally diverse backgrounds;
- **Information** – acquiring and evaluating data, organizing and maintaining files, interpreting and communicating, and using computers to process information;
- **Systems** – understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems;
- **Technology** – selecting equipment and tools, applying technology to specific tasks, and maintaining and troubleshooting technologies.

**THE FOUNDATION** - competence requires:

- **Basic Skills** – reading, writing, arithmetic and mathematics, speaking, and listening;
- **Thinking Skills** – thinking creatively, making decisions, solving problems, seeing things in the mind's eye, knowing how to learn, and reasoning;
- **Personal Qualities** – individual responsibility, self-esteem, sociability, self-management, and integrity.

*What Work Requires of Schools: A SCANS Report for America 2000*
The Secretary's Commission on Achieving Necessary Skills – U S Department of Labor



BEST COPY AVAILABLE